

WHAT IS CLAIMED:

1. A circuit interrupting device having a first pair of terminals and a second pair of terminals adapted to be connected between a load circuit and a line, the circuit
5 interrupting device comprising:

detection circuitry coupled to the first and second pair of terminals where either the first or second pair of terminals is adapted to be coupled to the line when the other pair of terminals is coupled to the load circuit.

2. The device of claim 1 wherein the detection circuitry comprises at least
10 first and second differential transformers each coupled to detect leakage current in the load circuit.

3. The device of claim 2 wherein the first differential transformer is coupled to detect leakage current in a load circuit coupled to the first pair of terminals.

4. The device of claim 2 wherein the second differential transformer is
15 coupled to detect a leakage current in a load circuit coupled to the second pair of terminals.

5. The device of claim 2 wherein the first differential transformer is coupled to detect leakage current when a load circuit is coupled to the first pair of terminals and the second differential transformer is coupled to detect leakage current when a load
20 circuit is coupled to the second pair of terminals.

6. The device of claim 5 wherein the first and second differential transformers are coupled through a four pole double throw latch to at least one rectifier.

7. The device of claim 6 wherein the first differential transformer is coupled through first and second poles of the four pole double throw latch to a first rectifier and
25 the second differential transformer is coupled through third and fourth poles of the four pole double throw latch to a second rectifier.

8. The device of claim 7 wherein the first rectifier is a full wave rectifier.
9. The device of claim 8 wherein the second rectifier is a full wave rectifier.
10. The device of claim 9 wherein the four pole double throw latch has at least four wiper arms each of which makes contact with a first of two contacts when is a first position and the second of the two contacts when in a second position.
- 5 11. The device of claim 10 further comprising:
a reset button, when depressed, is coupled to move the at least four wiper arms to their second position to contact their second contacts.
- 10 12. The device of claim 11 further comprising a spring coupled to urge the reset button to its up position.
13. The device of claim 11 further comprising a solenoid activated by one of the rectifiers when either the first or second differential transformer detects leakage current to open the connection between the wiper arms and their contacts to break the electrical connection between the line and the load circuit.
- 15 14. The device of claim 11 further comprising a second spring coupled to the reset button to urge the four pole double throw latch to couple the load circuit to the line when the reset button is pressed.